



THE BEAN BAG

A newsletter to promote communication among research scientists concerned with the systematics of the Leguminosae/Fabaceae

Number 41

May 1995



From the Editors

Joseph H. Kirkbride, Jr., John H. Wiersema, and Roger M. Polhill

The Bean Bag (BB) is designed to promote communication among research scientists concerned with legume systematics. To achieve this goal the BB is issued in May and November of each year and features seven columns: From the Editors, News (meetings, major events, announcements, etc.), Latin American Legume Report, Nodulation and Nitrogen Fixation (new nodulation records), New Readers, Gleanings, and Recent Legume Literature. Data in the Gleanings column are derived from questionnaire sheets which Readers complete and return. If you have news about legume systematics, send it to us for this column. The Recent Legume Literature column contains published research papers of specific interest to BB Readers. Recent is defined as one year old. We rarely will publish a citation that is more than one year old. Specific interest to BB Readers is defined as research papers of interest to a worldwide group of legume systematic botanists. We encourage BB Readers to send us notices, observations, etc.

Diacritical marks can now be placed in the BB. If such marks should be placed in your name, address, publications, etc., please let us know. We are especially interested in correcting our Directory.

The Bean Bag and the Directory can now be delivered to Readers via e-mail. If you wish to have your copies e-mailed to you, please send the following standard e-mail message

To: beanbag-request@rbgkew.org.uk — Subscribe BeanBag <my e-mail address>.

Electronic copies of the current and past BBs and the Directories (1987 through the present) can be obtained from the World Wide Web server of the Royal Botanic Gardens, Kew, United Kingdom or through the Internet at MUSE.BIO.CORNELL.EDU. Beginning in June, 1995, the BB will be available on the World Wide Web at <http://WWW.rbgkew.org.uk:80/herbarium/legumes/legumes/beanbag.html>. MUSE.BIO.CORNELL.EDU is a free service on the Internet maintained by the staff of the MUSE Project at Cornell University, Ithaca, New York, USA. Connect to MUSE.BIO.CORNELL.EDU via FTP using the name ANONYMOUS and your e-mail address as the password, and copies of the BB and the Directory are in the subdirectory /PUB/NEWSLETTERS/BEANBAG.

Bean Bag addresses:

**Editorial: USDA, ARS, SB&ML, Rm. 304, Bldg. 011A, BARC-West
Beltsville, MD 20705-2350 USA**

**Distributional: Herbarium, Royal Botanic Gardens, Kew, Richmond,
Surrey TW9 3AB, Great Britain**

Distribution of Bean Bag and the Directory

Barbara Mackinder

Since the previous issue, distribution of *The Bean Bag* is now undertaken by the Royal Botanic Gardens, Kew. Editing and compiling will continue to take place at USDA, Beltsville. Articles to be included in *The Bean Bag* should continue to be sent to the editors at Beltsville. Included with the previous issue was a "pink form" asking recipients to indicate if they would be able to receive *The Bean Bag* electronically. We encourage those who are able to receive *The Bean Bag* electronically to do so as it will help us to reduce distribution costs. Many readers have responded positively to this request. We will however continue to provide printed copies of *The Bean Bag* for those who are unable to receive it electronically. As well as providing *The Bean Bag* via e-mail, we are now able to offer the current issue of *The Bean Bag* and the Directory through the World Wide Web at:

<http://WWW.rbgkew.org.uk:80/herbarium/legumes/legumes/beanbag.html>

We plan to provide a friendly and interactive service. Your comments and suggestions as to how we might improve the service are welcome. Please send your thoughts by e-mail to:
 Beanbag-request@rbgkew.org.uk.

FLORA OF THE BALTIC COUNTRIES: COMPENDIUM OF VASCULAR PLANTS

CONTENTS: introduction; principles of compilation of the flora; physico-geographical characterization of the Baltic countries (geography, geology, geomorphology, climate, soils); plant cover (31 geographical 'districts' of vegetation types); nature conservation; list of site types used in the flora; other abbreviations; taxonomic part (13 families pteridophytes, 3 families gymnosperms, 34 families angiosperms: Salicales-Droseraceae); incomplete index of Latin plant names.

This work will introduce a wide range of botanists to the floristic composition of the region, that is, its peculiarities and geographic distribution of species. The work is written in parallel English and Russian and will consist of three volumes. The first part of volume 1 discusses the physico-geographic characteristics and vegetation of the Baltic countries (see Contents). Part 2 treats 550 species of pteridophytes (13 families), gymnosperms (Pinaceae, Cupressaceae, Taxaceae), and 34 families of angiosperms from Salicales to Sarraceniales. The text of this flora is short as it lacks traditional diagnostic characters except for critical, hard-to-distinguish taxa, in which case there are either keys or else the more essential distinguishing characters. The flora comprises all indigenous vascular plants plus casuals, naturalized taxa, and escapes from cultivation that are becoming established. The team of authors used principles from Flora Europaea (1964-80, 1993) for this Baltic flora. Common names are given in Estonian, Latvian, Lithuanian, and Russian. After the nomenclature for each taxon is a short biological and morphological characterization (life form, size, phenology). Letters and numbers designate habitats and geobotanical districts.

Laasimer, L., V. Kuusk, L. Tabaka, and A. Lekavicius, eds. 1993. Flora of the Baltic Countries: Compendium of Vascular Plants, vol. 1, 362 pages, illustrated, in English and Russian. Institute of Zoology and Botany of Estonian Academy of Sciences, Tartu, in association with Institute of Biology of Latvian Academy of Sciences, and Institute of Botany of Lithuanian Academy of Sciences. ISBN 9985-50-044-X (HB), US\$ 47.00. Order from: Eesti Loodusfoto AS, Riia 185A, Tartu EE2400, Estonia, phone: 372-7-477405, e-mail: elf@park.tartu.ee. Prepayment required by cheque payable to Eesti Loodusfoto AS, or swift transfer, in U.S. funds, and payable through Republic National Bank of New York, N.Y., swift:BLICUS33. Residents of the following countries can pay in their own currencies: Belgium BEF 1489; Denmark D.Kr. 285; Finland FIM 224; France FF 251; Germany DM 73; Great Britain GBP 30; Holland Hfl. 82; Norway NOK 318; Sweden SEK 354; and, Switzerland S.Fr. 61.

International Conference

BIODIVERSITY CONSERVATION & ECONOMY

22-24 September 1995 Calicut, India

The importance of biodiversity and its conservation is getting greater recognition all over the world, particularly in countries such as India, which strongly depend upon their agricultural and natural resources. Biodiversity conservation is not only essential for ecological and environmental rejuvenation but also for sustainable economic development. The vast genetic diversity of our economic crop plants and their wild relatives had, in the past, been responsible for successfully overcoming many difficult situations. Today, the very same properties of these plants are being made use of by transplanting their desirable genes into others to improve their biological productivity, to meet the growing demand of mankind.

The subject of biodiversity conservation has been engaging our attention during the past few years, and there have been many attempts at *in situ* conservation. Some species-rich areas were declared as Biosphere Reserves and National Parks, to give protection to their natural flora and fauna. However, in many places this was not a success since the local population whose economic security and livelihood depended on these and who, in fact, were conserving the local biodiversity through thick and thin over a period of many centuries were ignored. With its utility available for all of mankind, biological diversity is now globally recognized as a national sovereign property of each country.

The most destructive activity of man, in many instances in the name of development, that has been going on in the last decade of this century that will take many millions of years to correct, is the extinction of genetic and species diversity. While the ecological and environmental implications might not be fully appreciated by many, the economic potential of biodiversity conservation, now enhanced because of the widening scope of the biotechnology industry, is worth stressing, to highlight the need for more effective measures for biodiversity conservation. Extracted from the conference circular.

The main themes of the conference will be:

1. Biodiversity studies in the tropics;
2. Strategies for biodiversity conservation—past, present, and future; and,
3. Biodiversity conservation and economy of the indigenous people.

For further information, contact the Organizing Secretary: Dr. K.S. Manilal, Organizing Secretary, Biodiversity Conference, University if Calicut, Calicut - 673 635, Kerala, India.

The Rupert Barneby Award

Enrique Forero

The New York Botanical Garden is pleased to announce that Ing. Nelson Zamora of the Instituto Nacional de Biodiversidad (INBio), Costa Rica, is the recipient of the 1994 *Rupert Barneby Award*. Ing. Zamora will be working on several groups of mimosoid and caesalpinioid legumes for Costa Rica.

The New York Botanical Garden invites applications for the 1995 *Rupert Barneby Award*. The award of \$1,000.00 is to assist researchers planning to come to The New York Botanical Garden to study the rich collection of Leguminosae. Anyone interested in applying for the award should submit their curriculum vitae, a letter describing the project for which the award is sought, and how the collection at NYBG will benefit their research. Travel to NYBG should be planned between January 1, 1996 and January 31, 1997. The letter should be addressed to Dr. Enrique Forero, Director, Institute of Systematic Botany, The New York Botanical Garden, Bronx, NY 10458-5126 USA, and received no later than December 1, 1995. Announcement of the recipient will be made by December 15th. Anyone interested in making a contribution to *The Rupert Barneby Fund in Legume Systematics*, which supports this award, may send their check, payable to The New York Botanical Garden, to Dr. Forero.

NEWSLETTERS

The Drifting Seed

Dr. Charles R. "Bob" Gunn, former Senior-Editor of *The Bean Bag*, has distributed the first issue of a new newsletter, *The Drifting Seed*, devoted to seeds and fruits dispersed by the world's tropical currents. Commonly known as sea-beans, these ocean travelers are found on shores around the world. The Fabaceae are one of the commonest and most durable families among the sea-beans. The newsletter will provide information about these disseminules, their parent plants and where they grow, how they travel, and the people who collect and study them. It will be a semiannual newsletter, and the first issue (Volume 1, Number 1) was dated May 1, 1995 and mailed during May 1995. Volume 1, Number 2 will be dated October 1, 1995 and mailed during October 1995. The newsletter will follow those dates in the ensuing years. For further information or to receive *The Drifting Seed*, contact Dr. Charles R. (Bob) Gunn, 120 White Squirrel Lane, Brevard, North Carolina 28712, USA, telephone: 704-883-9719.

Nodulation and Nitrogen Fixation

Legume Nodulation Reports not in Allen and Allen (1981)

Taxon	Status ¹	Nodule ² Shape	Source ³
-------	---------------------	---------------------------	---------------------

<i>Acacia nilotica</i> (L.) Delile	+		3
<i>Acacia nilotica</i> (L.) Delile subsp. <i>hemispherica</i> Ali & Faruqi	+		3
<i>Acacia nilotica</i> (L.) Delile subsp. <i>indica</i> (Benth.) Brenan	+		3
<i>Acacia nilotica</i> (L.) Delile subsp. <i>subalata</i> (Vatke) Brenan	+		3
<i>Acacia senegal</i> Willd.	+		3
<i>Aeschynomene brasiliiana</i> (Poir.) DC.	+		1
<i>Aeschynomene evenia</i> Wright	+		1
<i>Aeschynomene histrix</i> Poir.	+		1
<i>Alysicarpus heterophyllus</i> (Baker) Jafri & Ali	+		3
<i>Alysicarpus monilifer</i> (L.) DC.	+		3
<i>Atylosia platycarpa</i> Benth.	+		3
<i>Caesalpinia bonduc</i> (L.) Roxb.	-		3
<i>Caesalpinia gilliesii</i> (Hook.) Dietr.	-		3
<i>Cassia auriculata</i> L. (= <i>Senna auriculata</i> (L.) Roxb.)	-		3
<i>Cassia holosericea</i> Fresn. (= <i>Senna holosericea</i> (Fresn.) Greuter)	-		3
<i>Cassia italica</i> (Miller) Sprengel subsp. <i>micrantha</i> Brenan (= <i>Senna italica</i> Miller)	-		3
<i>Cassia italica</i> (Miller) Sprengel subsp. <i>italica</i> (= <i>Senna italica</i> Miller)	-		3
<i>Cassia roxburghii</i> DC.	-		3
<i>Cassia surattensis</i> Burm. f. (= <i>Senna surattensis</i> (Burm. f.) Irwin & Barneby)	-		3
<i>Centrosema venosum</i> Mart.	+		1
<i>Chamaecrista rotundifolia</i> (Pers.) Greene var. <i>grandiflora</i> (Benth.) Irwin & Barneby	+		1
<i>Chamaecrista calycioides</i> (Colladon) Greene	+		1
<i>Chamaecrista desvauxii</i> (Colladon) Killip var. <i>mollissima</i> (Benth.) Irwin & Barneby	+		1
<i>Crotalaria albida</i> Heyne ex Roth	+		2
<i>Crotalaria bialata</i> Schrank (= <i>C. alata</i> D. Don)	+		2
<i>Crotalaria calycina</i> Schrank	+		2
<i>Crotalaria medicaginea</i> Lam. var. <i>medicaginea</i>	+		3
<i>Crotalaria protrata</i> Rottl. ex Willd.	+		2

<i>Crotalaria tetragona</i> Andr.	+	2
<i>Desmodium caudatum</i> (Thunb.) DC.	+	2
<i>Desmodium motorium</i> (Houtt.) Merr.	+	2
<i>Desmodium triquetrum</i> (L.) DC. subsp. <i>pseudotriquetrum</i> (DC.) Prain	+	2
<i>Flemingia chappar</i> Buch.-Ham. ex Benth.	+	2
<i>Flemingia strobilifera</i> (L.) R. Br.	+	2
<i>Indigofera argentea</i> Burm. f.	+	3
<i>Indigofera hochstetteri</i> Baker	+	3
<i>Indigofera linnaei</i> Ali	+	2
<i>Indigofera oblongifolia</i> Forsskal	+	3
<i>Indigofera prostrata</i> Willd. (= <i>I. trifoliata</i> L.)	+	2
<i>Indigofera sessiliflora</i> DC.	+	3
<i>Macroptilium gracile</i> (Benth.) Urban	+	1
<i>Phaseolus diversifolius</i> Pittier	+	1
<i>Prosopis cineraria</i> (L.) Druce	+	3
<i>Sesbania bispinosa</i> (Jacq.) W. Wight	+	2
<i>Sophora mollis</i> (Royle) Baker	+	2
<i>Taverniera lappacea</i> (Forsskal) DC.	+	3
<i>Tephrosia pumila</i> (Lam.) Pers.	+	2
<i>Tephrosia sessiliflora</i> (Poir.) Hassler	+	1
<i>Tephrosia strigosa</i> (Dalz.) Sant. & Maheshw.	+	3
<i>Trigonella corniculata</i> L.	+	3
<i>Trigonella gracilis</i> Benth.	+	3
<i>Rhynchosia pulverulenta</i> Stocks	+	3
<i>Sesbania concolor</i> Gillett	+	3
<i>Sesbania sesban</i> (L.) Merr. var. <i>sesban</i>	+	3
<i>Vigna dalzelliana</i> (O. Kuntze) Verdc.	+	3

¹Status: +, root nodules reported as present; -, root nodules reported as absent.

²Nodule shape: Ae, aeschynomoid; As, astragaloid (now referred to as caesalpinoid by Corby); Cr, crotalaroid; CrB, branched crotalaroid; CrS, simple crotalaroid; De, desmodioid; Gl, globose; Lu, lupinoid; Mu, mucunoid.

³Source:

1. Mallorca, M.S. de, and M.L. Izaguirre-Mayoral. 1993. A comparative evaluation of the symbiotic N_2 -fixation and physiological performance of thirty-six native legume species collected in a tropical savanna during the rainy and dry seasons. *Symbiosis* 16: 225-247.
2. Subramaniam, B., and C.R. Babu. 1994. New nodulating legumes of potential agricultural and forestry value from subtropical Himalayan ecosystems. *Biological Agriculture and Horticulture* 10: 297-302.
3. Mahmood, A., and P. Iqbal. 1994. Nodulation status of leguminous plants in Sindh. *Pakistan Jurnal of Botany* 26(1): 7-20.

Gleanings

ADEMA is preparing the Millettiae for *Flora Malesiana*.

ADAMS is revising the European data set for the ILDIS database, preparing a checklist of European legumes, and working on various problems in Hedysareae, particularly *Onobrychis*.

AGUILAR is updating the nomenclature of Philippine legumes and studying the morphology of arboreal leguminous seeds. She needs seeds of arboreal leguminous species, and offers herbarium specimens of flowering plants from the Philippines.

ALBUQUERQUE is now interested in medicinal weeds, including the following Leguminosae: *Cassia occidentalis*, *C. tora*, *Mimosa pudica*, and *Zornia diphylla*. He needs bibliographic information about weedy Leguminosae with medicinal properties, and offers information about Amazonian plants.

ALONSO-REYES is working on the isolation, behavior, ranking, and intra- and interspecific competition of rhizobia and their inoculation in sustainable agriculture. He needs procedures and methods for rhizobia, and offers legume seeds.

AMBROSE will have a new catalogue of genetic stocks for *Pisum* available from August 1995. This collection contains the authorized accessions relating to entries in the gene list of the *Pisum* Genetics Association. He wants any new or novel mutations in peas that nobody else has time to investigate.

AMELA (New Reader), see HOC.

ANISHETTY is promoting the collection, conservation, evaluation, and documentation of genetic resources, and offers assistance in obtaining needed germplasm from various genetic resource centers or gene banks.

ARAMBARRI is doing a cladistic analysis of *Lotus* using seed characters. She offers the following: *Acacia visco*, *Adenanthera colubrina* var. *cebil*, *Bauhinia candicans*, *Enterolobium contortisiliquum*, *Erythrina crista-galli*, *Gleditsia amorphoides*, *Parapiptadenia rigida*, *Parkinsonia aculeata*, *Peltophorum dubium*, *Pterogyne nitens*, *Senna spectabilis*, and *Tipuana tipu*.

BEAUCHAMP is working on legumes with ornamental, horticultural potential in the Mediterranean climate of southern California, and offers collections from southern California.

BENNETT (New Reader) is doing ecogeographic surveys of pasture legumes including *Lathyrus* species, perennial *Medicago*, the *Vicia narbonensis* group, and other *Vicia* species. A large part of her work involves Geographical Information Systems (GIS), and she is interested in sharing knowledge with anyone else using GIS.

BEYRA-MATOS had two articles accepted for publication in the Spanish journal *Fontqueria*, "Distribución y ecología de las especies cubanas del género *Crotalaria* (Leguminosae-Faboideae) en Cuba" and "Taxonomía numérica de la tribu Robinieae (Leguminosae-Faboideae) en Cuba." She has finished her taxonomic studies of the genera *Aeschynomene*, *Belairia*, and *Pictetia* of tribe Aeschynomeneae, and will continue taxonomic study of this tribe with the genera *Arachis*, *Poiretia*, *Stylosanthes*, and *Zornia*. She will also be continuing her studies of the anatomy and foliar architecture of the Cuban representatives of tribe Aeschynomeneae, and after completing all the genera of the tribe, she will write a treatment of tribe Aeschynomeneae for the *Flora de Cuba*. She offers fresh material and herbarium specimens of Cuban legumes.

BROCKWELL is studying the geographic taxonomy of *Medicago lacinata* and of its specific strains of *Rhizobium meliloti*. He needs seeds and roots of *Medicago lacinata*, and offers strains of *Rhizobium* spp. for temperate legumes.

BRUBAKER and LERSTEN have a paper entitled "Paraveinal mesophyll: Review and survey of the subtribe Erythrininae (Phaseoleae; Papilionoideae; Leguminosae)" in press in *Plant Systematics and Evolution*.

BRUNEAU is working on the molecular systematics of tribes Amherstieae and Detarieae. See HERENDEEN.

BRYAN has completed his Ph.D. dissertation, "Leguminous trees with edible beans, with indications of a rhizobial symbiosis in non-nodulating legumes."

CANNON is studying fungal pathogens as a potential threat to tropical *Acacia* plantations in conjunction with the Centre for International Forestry Research (CIFOR), Indonesia, and CSIRO, Australia.

CHEN is preparing the Papilionaceae for the *Flora of Yunnan*.

COLES is working on the phytogeography of *Cicer*, and needs herbarium specimens of *Cicer* from Russia and Greece and *Cicer* literature after 1990.

COMBES is studying *Phaseolus* sensibility to ozone. He needs lines of *Phaseolus* resistant and sensitive to ozone, and offers *Lathyrus* accessions and local *Phaseolus* accessions.

CORBY needs 30 good seeds of *Piscidia piscipula*.

CORDEIRO is studying the effects of phosphorus and nitrogen on the nodulation and nitrogen fixation of *Tipuana tipu*.

CRISP has a revision of *Brachysema* in press, and submitted a synopsis of *Daviesia*. He is developing a molecular phylogeny of the *Gastrolobium* group (Mirbelieae) using DNA sequences of the internal transcribed spacers in nuclear ribosomal genes. He, WESTON, and P.H. Linder are studying the cladistic biogeography of plants in Australia and the southern hemisphere, combining phylogenies of Mirbelieae with other taxa.

Curtis, J.D., see LERSTEN.

DEBOUCK's laboratory is participating in wider initiatives in tracing evolutionary patterns among the five bean cultigens and their wild relatives, and they are also conducting taxonomic studies on selected tropical forage legume genera. CIAT is offering to bona fide researchers germplasm from a collection of more than 39,000 accessions for more than 35 species and subspecies of *Phaseolus* and 18,000 accessions of tropical forage legumes for more than 600 species. See A. Gutierrez Salgado.

DABO needs relevant reprints on the taxonomy and identification of Leguminosae.

DUKE is investigating alleged hallucinogenic synergy between reishi mushrooms and *Parkia*, and doing l-dopa analyses of food legumes, *Mucuna* and *Vicia*. He and P. Kanfiner are working on genistein analyses of edible pulses.

EDWARDS is working on floral dimorphism in species of *Argyrolobium*.

ESPINOSA-HERNANDEZ is studying the effects of aluminum toxicities on *Lupinus arboreus*, *Medicago sativa*, and *Stylosanthes humilis*.

EZE is studying the physiological effects of allelochemicals on local legume crops.

FAGWALAWA is studying the effects of IAA (indole-3-acetic acid) alone and with cytokinins, gibberellin, and ethylene on the physiology of groundnut (*Arachis hypogaea*), Bambara groundnut (*Voandzeia subterranea* [= *Vigna subterranea*]), and cowpea (the brown variety). He needs literature on the physiology of legumes, estimation and isolation of carbohydrates, protein, and fat from legumes, and measurement of physiological processes in legumes, such as photosynthesis, respiration, etc., and offers the findings of his project when completed.

FANTZ, see PREDEEP.

FERGUSON is now working on the pollen morphology of tribe Detarieae (Caesalpinoideae).

FILIN, V.R., and SOKOLOFF have completed the "Manual of N-E Karelia Keretensis Flora" which includes more than 500 species of vascular plants of which 22 are Fabaceae.

Gepts, P., see A. Gutierrez Salgado.

GILL is working on the germination biology of *Albizia coriaria* and *Samanea saman* and the differential germination of three floral forms of *Caesalpinia pulcherrima*.

González-Rodríguez, M.A., a Master's student of KOLTERMAN, is initiating a study of the ecology of *Calliandra locoensis* endemic to serpentine soils in a restricted area of southwestern Puerto Rico. He needs materials of or information on any of the eleven spiny *Calliandra* species endemic to the Greater Antilles, and offers seeds of *C. locoensis* and *C. haematomma* from south-central Puerto Rico.

GRANT is preparing an atlas of chromosome numbers and an interspecific and intergeneric hybridization index for the genera *Lotus* and *Tetragonolobus*.

GREUTER is preparing the Genisteae for *Flora Hellenica*.

GROSSO, B., M. Saint-Martin, and VASSAL have a paper entitled "Stomatal type of the genus *Acacia* (Fabaceae, Mimosoideae), an appraisal of diversity and taxonomic interest" in press in the *Botanical Journal of the Linnean Society, London*. See VASSAL.

GUPTA was invited to prepare a manuscript on the taxonomy of cultivated plants, including legumes, for a book being edited by K.S. Manilal, and is working on the cytogenetics of chickpea, lentils, and pea and the breeding of lentils, mungbean, and pigeon pea. He offers translocation stocks of lentils.

Gutierrez Salgado, A., P. Gepts, and DEBOUCK have a paper, "Evidence for two gene pools of the lima bean, *Phaseolus lunatus*, in the Americas," in press in *Genetic Resources and Crop Evolution*.

HANNON is preparing a manuscript on a new country record for *Lotus crassifolius* var. *otayensis* in northern Baja California, Mexico. He needs rare ornamental species, tropical and subtropical, mainly woody, of all three subfamilies, wild-collected seeds with data, and offers seeds or herbarium specimens of any Fabaceae from southern California and northern Baja California, Mexico.

HARDER offers to collect requested materials from tropical Africa and Vietnam and to determine tropical papilionoids.

HASSAN is working on the biosystematics of *Ormocarpum* at the University of Reading, United Kingdom.

HEGNAUER is working on two volumes of his *Chemotaxonomie der Pflanzen*: volume XI b-1, Leguminosae - Caesalpinoideae and Mimosoideae (planned for 1996), and volume XI b-2, Leguminosae - Papilionoideae.

HENNEN is studying the Raveneliaceae on Leguminosae of the world. He needs any plant-rust fungi (Uredinales) on Leguminosae, especially *Ravenelia* on *Prosopis*, and offers rusts on legumes.

HERENDEEN is working on the phylogenetic relationships of tribes Amherstieae and Detarieae. See BRUNEAU.

HIDALGO is studying interaccession variability of *Phaseolus* using biochemical markers, and offers germplasm of cultivated *Phaseolus*.

HOC has two papers in press: "Tribe Ingeae" in *Flora de la Provincia de Jujuy* and "Tribe Ingeae" in *Atlas Palinológico del Nordeste Argentino*. She, PALACIOS, and AMELA (New Reader) are preparing a manuscript on the floral biology of *Vigna candida* and *Macroptilium erythroloma*, and they are also starting to work on the floral biology of *Prosopis alba* and native species of *Phaseolus*, *Macroptilium*,

and *Vigna*. She needs seeds of *Vigna adenantha* from Meso- and South America, and offers seeds of *Phaseolus* and *Vigna*.

HONG has begun a reconsideration of the taxonomic position of *Albizia coreana*.

HOU is working on Caesalpinoideae for the *Tree Flora of Sabah and Sarawak*, and is also revising the genera *Abrus*, *Sesbania*, and *Vigna* for *Flora Malesiana*.

HU is studying the genetic diversity and differentiation of *Caragana microphylla* and genetic diversity, at the molecular level, and salt tolerance in natural populations of *Glycine max*.

HUANG is revising the genus *Entada* for Taiwan.

HUGHES is continuing to work on the systematics of *Leucaena*, and offers seeds from a range of woody Central American legumes.

JAASKA has sent a manuscript to *Plant Systematics and Evolution* on the isoenzyme diversity and phylogenetic affinities among American *Phaseolus*, and is studying the isoenzyme diversity in *Vicia* subgenus *Vicia*.

JOHNSON, C.D., is studying host relationships between bruchids of the genus *Sennius* and legumes, and needs bruchid beetles from plant seeds.

JOHNSON, M.B., needs seeds of arid-land Fabaceae, and offers the same.

Kanfiner, P., see DUKE.

KELMAN is evaluating and breeding *Lotus corniculatus* and *L. pedunculatus*. He needs ecotypes of *L. corniculatus*, *L. pedunculatus*, and *L. tenuis*, and offers a range of accessions of *Astragalus* and *Lotus*, including native Australian *Lotus* species.

KIRKBRIDE is beginning a biosystematic monograph of *Lotus* subgenus *Pedrosia*.

KITE is working on the chemotaxonomy of pipecolic acids in *Inga*.

Kodela, P., see TINDALE.

KOLTERMAN, see M.A. González-Rodríguez.

KRETSCHMER is evaluating selected wild peanuts as grazing and cover crops, and offers large collections of *Aeschynomene* spp., *Alysicarpus vaginalis*, *Centrosema* spp., *Desmodium barbatum*, *D. heterocarpon*, *Macroptilium atropurpureum*, and *Stylosanthes* spp.

LAMONT, see MAXTED.

LARSEN, S.S., needs Chinese and Malesian *Bauhinia*, and offers determinations of same.

LERSTEN and J.D. Curtis have a paper entitled "Two foliar idioblasts of taxonomic significance in *Cercidium* and *Parkinsonia* (Leguminosae; Caesalpinoideae)" in press in the *American Journal of Botany*. See BRUBAKER.

Linder, P.H., see CRISP.

LOCK is working on the Fabaceae of Malesia.

MAHESHWARI is preparing ethnobotanical documentation on Indian legumes and their wild relatives.

Manilal, K.S., see GUPTA.

Maumont, S., and VASSAL are working on a cladistic approach to phyletic relationships in the genus *Acacia*.

MAXTED, LAMONT, and R. Sackville-Hamilton (Institute for Grassland and Environmental Research, Aberystwyth, Wales) are doing an ecogeographic survey of *Trifolium* species in Turkey. He needs seeds or herbarium specimens of any Turkish *Trifolium* species.

MENDEZ needs forage legumes for arid areas with less than 300 mm of rainfall per year, and offers seeds of *Adenocarpus* spp., *Bituminaria bituminosa*, *Chamaecytisus prolifer*, and *Teline* spp. [= *Genista*].

MENDONÇA is working on the phenology of arboreal legume species in the Biological Station of Caratinga, Minas Gerais, Brazil.

MILLER (New Reader) needs seeds of desert legumes, and offers seeds of same (1,200 species available).

MONTEIRO is preparing a floristic treatment of the legumes in the state of São Paulo, Brazil. The project is being funded by FAPESP (São Paulo State Scientific Funding Agency). Brazilian and foreign taxonomists are being invited to participate in the project. Legume taxonomists who are interested in contributing should contact either MONTEIRO or Dr. Ana Tozzi at the herbarium UEC. Manuscripts must be submitted by July 1997.

MORERA is evaluating jicama (*Pachyrhizus erosus*) in monoculture and in association with yuca (*Manihot esculenta*). He needs *Pachyrhizus*, and offers *Dolichos*, *Pachyrhizus*, *Phaseolus*, *Psophocarpus*, and *Vigna*.

MOREIRA, F.M.S., and M.F. Silva have a paper, "Associação rizóbio-leguminosas na Amazônia. I. Municípios de Manaus e Manacapuru (Distrito do Caciana)," in press in *Boletim do Museu Paraense Emílio Goeldi*. She is now working on: 1) nodulation capability of native forest and "cerrado" species, 2) taxonomy of rhizobia isolated from leguminous forest species, 3) screening of rhizobia for infectivity, effectiveness, and efficiency in forest species, and 4) limiting factors to growth and nodulation of Leguminosae forest species. See F.W. Moreira.

Moreira, F.W., F.M.S. MOREIRA, and M.F. Silva have a paper entitled "Germinação, crescimento em viveiro e nodulação de *Swartzia laevicarpa* Amshoff (saboarana)" in press in *Acta Amazônica*.

MRIDHA is studying the mycorrhizal associations of legumes grown in the tea gardens of Bangladesh.

MUNYENYEMBE is preparing treatments of some Phaseoleae genera for *Flora Zambesiaca* and an annotated checklist of the legumes of Malawi. He needs Phaseolinae from Africa, and offers specimens of vascular plants from Malawi.

MUSTAPHA (New Reader) is studying the cytobotany of cowpea (*Vigna unguiculata*), and needs literature on the cytobotany of cowpea.

NOVIKOVA is studying the microsymbionts of *Arachis hypogaea*, and needs seeds of *Macroptilium atropurpureum*.

PALACIOS, see HOC.

PALMER is developing genetic transformation protocols for mung bean and related *Vigna* species.

PASQUET is interested in Pulney Hills *Vigna*.

PIZARRO is carrying out plant collection and exploration and primary evaluation on *Arachis* and *Cratylia*. He needs literature on *Vigna*, and offers *Arachis pintoi* and *Cratylia argentea* germplasm.

PLANCHUELO is conducting multidisciplinary studies of cultivated and wild South American *Lupinus* species. The project is a complete approach to studying the relationships between South American and cultivated species of *Lupinus*, including taxonomic evaluation of type materials, seed morphology, plant anatomy, chemotaxonomy, and geographic distribution of species. She is taxonomically evaluating the morphological characters of *Crotalaria*. She began with the evaluation of the polymorphic characteristics of the *C. incana* complex, and will continue with other *Crotalaria* species of Argentina. Finally she is morphologically studying cultivars of *Arachis hypogaea*. She is analyzing their leaf morphology in relation to water availability in the soil and other morphological characters to identify peanut grains. She needs herbarium materials and seeds of cultivated and wild species of *Crotalaria* and *Lupinus*, and offers herbarium specimens of vascular plants from Argentina and reprints of publications on legumes.

PODLECH is working on revisions of *Astracantha*, *Astragalus* sect. *Acidodes*, and *Astragalus* sect. *Malacothrix*.

POKLE is working on the chemotaxonomy of *Alysicarpus*. He needs literature on *Alysicarpus*, especially on its nutritive values and chemical composition, and seeds of forage species of *Alysicarpus*, especially from Africa, Australia, and the Americas, and offers dried specimens or seeds of legume species occurring in his region.

PREDEEP and FANTZ have a revision of *Clitoria* from Southeast Asia in Press, and PREDEEP has started to prepare a legume flora of the state of Kerala, India. He needs revisionary literature on genera of tropical legumes, and offers legume specimens from the state of Kerala, India.

QUATTROCCHI is working on an etymological dictionary of plant names.

RANGAPPA is evaluating selected beans (*Phaseolus*) and vegetable-type soybeans (*Glycine max*) for biotic and abiotic stress factors.

RUDD is continuing to work on treatments for *Flora Mesoamericana*, and needs material of *Ateleia*, *Centrolobium*, *Dalbergia*, and *Machaerium*.

Sackville-Hamilton, R., see MAXTED.

Saint-Martin, M., see B. Grosso.

SANTOS needs seeds of *Erythrina*, and offers seeds of Canarian legumes.

SCHMIDT is studying genetic and environmental interactions in *Desmodium ovalifolium*.

Scott, R.C., see D.L. SMITH.

Silva, M.F., see F.M.S. MOREIRA and F.W. Moreira.

SIMPSON needs seeds of *Caesalpinia* and *Hoffmannseggia*, and offers leaf material of *Caesalpinia* and *Hoffmannseggia* for anatomical study.

SMITH, D.L., and R.C. Scott are surveying the cotyledon anatomy and venation of *Acacia*.

SOKOLOFF has finished studies of the seed and fruit anatomy and morphology of 27 of 30 species of *Anthyllis*, s.l., *Hymenocarpus*, *Hammatolobium*, *Vermifrax*, and *Cytisopsis* and of the androecial anatomy of *Anthyllis vulneraria*. He is now working on: 1) taxonomy of *Anthyllis*, 2) generic limits in *Anthyllis* and related genera, and 3) middle Russian Fabaceae for the middle Russian flora project. He needs seeds, fruits, and herbarium material of Loteae, especially *A. agaea*, *A. henoniana*, *A. henoniana* ssp. *valentina*, *A. plumosa*, *A. subsimplex*, *Hammatolobium graecum*, and *H. lotoides*, and offers: 1) copies of his bachelor's thesis, "Morphological and taxonomic study of *Anthyllis*, s.l.", 2) herbarium specimens of vascular plants from the Murmansk region and Karelia, Russia, and 3) herbarium specimens and seeds of *Anthyllis vulneraria*, s.l., from Russia. See V.R. Filin and TIKHOMIROV.

SPRENT is working on the non-nodulating *Acacia* species.

SURESH is working on cover crops and sand binders, and offers *Entada rheedei*, *Derris heterophylla*, and *Pterocarpus marsupium*.

SUSO has a paper in press (*Canadian Journal of Plant Science*) on outcrossing in two faba bean cultivars in dryland conditions of Spain.

SZABO needs seeds of cultivated and wild *Trifolium ambiguum*, *T. caucasicum*, *T. ochroleucum*, *T. pannonicum*, and *Trifolium* sect. *Stenostomum* spp.

THOTHATHRI is studying the Leguminosae of West Bengal. He needs literature on Asiatic legumes, and offers reprints on Indian legumes and their taxonomy.

TINDALE and P. Kodela are preparing several papers on new species and subspecies of *Acacia* so that they may be included in two forthcoming volumes of the *Flora of Australia*.

TIKHOMIROV and SOKOLOFF have partially completed a special revision of the Leguminosae of middle Russia for ILDIS.

TUCKER is beginning a comparative study of floral development, using scanning electron microscopy, in caesalpinioid tribes Amherstieae/Detarieae and Cercideae. Papers are being prepared on floral development in *Amherstia* and *Tamarindus* in Amherstieae and on *Brownea*, *Saraca*, and *Schotia* in Detarieae. Resultant data on these and selected additional representatives of about 82 species in 41 genera on hand (of a total of 82 in Amherstieae/Detarieae) will be analyzed cladistically to reveal whether these tribes are monophyletic (individually and/or together) and to determine relationships with other caesalpinioid tribes. She needs additional liquid-preserved bud material of taxa in these tribes.

Tozzi, Ana, see MONTEIRO.

YATAZAWA is studying the nodulation of *Caesalpinia* and *Cassia*.

VAN DER MAESEN needs seeds of *Parkia filicoidea* and *P. bicolor*, and offers herbarium specimens of African plants and tree seeds from west Africa.

VASSAL has a paper in press entitled "Un exemple de biodiversité: le genre *Acacia* subgen. *Heterophyllum*" in *Actes du Colloque International "Phytogéographie tropicale, réalités et perspectives"*. He and B. Grossi are working on the specialization of seed surfaces and adaptation to dryness of phyllodes in the genus *Acacia*. See B. Grossi and S. Maumont.

VAZ is preparing a taxonomic revision of *Bauhinia* sect. *Pauletia* ser. *Cansenia*. She needs herbarium specimens of *Bauhinia* sect. *Pauletia* ser. *Cansenia* and Brazilian *Bauhinia*, and offers to identify Brazilian *Bauhinia*.

VEASEY is continuing to work on *Sesbania*, and is now collecting field data.

VEIGA is preparing a set of morphological, isoenzymatic, and agronomic descriptors for wild species of peanut (*Arachis hypogaea*) which he is using to describe those species, and is determining their potential for use in improving cultivated peanut.

WAINES is studying the pollination biology of common beans, *Phaseolus vulgaris*, and making crosses among disease resistant chickpeas. He needs seeds of new collections of annual and perennial species of *Cicer*, and offers *Phaseolus acutifolius* seeds.

WEDER is studying the protease inhibitors and polyphenols of *Phaseolus vulgaris*.

WESTON, see CRISP.

WIERINGA needs to see new incoming herbarium material of *Aphanocalyx*, *Monopetalanthus*, *Michelsonia*, and *Tetraberlinia* and any other material of these four genera which he has not yet examined, and offers available duplicate specimens of all major tropical African families.

WILLIAMS is investigating peanut genetic diversity in Mexico and the genetic diversity of archeological peanuts from coastal South America. He needs archeological specimens of *Arachis hypogaea*, and offers peanut landrace germplasm.

WOJCIECHOWSKI needs Galegeae from central and southern Asia.

ZHANG is studying the phylogeny and biogeography of Cercideae. He needs specimens, seeds, and leaves of *Adenolobus*, *Bauhinia*, *Brenierea*, *Cercis*, and *Griffonea*, and offers specimens and seeds of Chinese legumes, *Bauhinia* and *Cercis* in particular.

ZYMNITSKAYA is now working on the embryology, breeding, and selection of *Trifolium*, and has also started on the embryology of *Astragalus* and *Trigonella*. She needs information on the reproductive biology of *Trigonella*, and offers publications on the intraspecific variability in the reproduction of *Trifolium trichocephalum* and *T. pannonicum*.

RECENT LEGUME LITERATURE

Eds. Note: Author names in all capital letters are BB Readers. Their full names and addresses are listed in November 1992 BB Directory and supplements. Correspondence about their articles should be sent directly to them.

AGUILAR, F.C. Pitargue, Jr., and M.O. Cajano. 1994. Nodulation of legumes in the Philippines. In SPRENT and MCKEY, eds., The nitrogen factor. Advances in Legume Systematics 5: 25-31.

AGULLO, HOC, and BRIZUELA. 1994. Sindrome floral en *Vigna candida* (Leguminosae). Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 805. (abstract)

Akbayin, H. and R. Demir. 1994. A clustering analysis on *Medicago* L. (Fabaceae) species in the province of Diyarbakir in south-east Anatolia. Turk. J. Bot. 18(5): 419-423.

Al-Khatib, M.M., T. McNeilly, and J.C. Collins. 1994. Between and within cultivar variability in salt tolerance in lucerne, (*Medicago sativa* L.). Genet. Resources Crop Evol. 41(3): 165-173.

Angyalossy-Alfonso, V. and R.B. Miller. 1994. Anatomia do lenho e da casca de *Swartzia* Schreber: considerações taxonômicas. Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 855. (abstract)

ATFGRC. 1995. The Australian Tropical Forages Genetic Resource Centre Newsletter. Australian Tropical Forages Genetic Resource Centre (CSIRO Cunningham Lab, 306 Carmody Road, St. Lucia, Queensland 4067) 4: 1-4. See Bean Bag 38: 6. 1993.

Azevedo-Tozzi, A.M.G. de. 1994. Contribuição ao conhecimento de *Poecilanthe* (Leguminosae, Papilionoideae, Millettieae). Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 259. (abstract)

Azevedo-Tozzi, A.M.G. de. 1995. New species of *Lonchocarpus* Kunth (Leguminosae: Papilionoideae: Millettieae) from Brazil. Kew Bull. 50(1): 173-177. Two new species.

Badr, A., W. Martin, and U. Jensen. 1994. Chloroplast DNA restriction site polymorphism in Genisteae (Leguminosae) suggests a common origin for European and American lupines. Pl. Syst. Evol. 193(1-4): 95-106. Data suggest that Lupinus should be removed from the Genisteae.

Baki, B.B. and PRAKASH. 1994. Studies on the reproductive biology of weeds in Malaysia - anther sterility in *Mimosa invisa*. Wallaceana 73: 13-16.

BANKS. 1994. Genetic significance and implications of peanut artifacts recovered from a royal tomb, Sipan, Peru. Proc. Amer. Peanut Res. Educ. Soc.

BARNEBY. 1994. A new purpleheart (*Peltogyne*, Caesalpiniaceae) from South Bahian Atlantic forest (Brazil). 46(4): 270-273.

Basurto Peña, F.A. 1994. El género *Phaseolus* en México: una visión etnobotánica. Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 442. (abstract)

Bavaliya, N.K. 1993. Floristic elements of legumes of Rajasthan and the Rajasthan flora. J. Phytol. Res. 6(1-2): 47-49.

Belalcázar, J. and SCHULTZE-KRAFT. 1994. La colección de forrajeras tropicales en CIAT: 4. Catálogo de germoplasma de Colombia/Tropical Forage Collection at CIAT: 4. Catalog of germplasm from Colombia. Documento de Trabajo/Working Document, CIAT, Cali, Colombia 137: 1-604.

Beniwal, R.S., O.P. Toky, and P.K. Sharma. 1995. Genetic variability in symbiotic nitrogen fixation between provenances of *Acacia nilotica* (L.) Willd. ex Del. Genet. Resources Crop Evol. 42(1): 7-13.

Bianco, C.A., T.A. Kraus, and M. Grosso. 1994. Formas de crecimiento y morfología de las inflorescencias en las especies del género *Senna* (Leguminosae-Caesalpinoideae) del sur de la Provincia de Córdoba. Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 17. (abstract)

BISBY. 1994. Fabaceae databases: priorities & perspectives. Res. Simp. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 33. (abstract)

Boa, E. and J. Lenné. 1994. Diseases of nitrogen fixing trees in developing countries: an annotated list. Chatham, U.K.: Natural Resources Institute. 82 pp. This publication contains a list of pathogens (fungi, bacteria, and viruses) reported from a selected list of mostly legume trees. The title should not be strictly believed, however, as a number of legume species are included though they have never been reported as nitrogen-fixing. There are two parts to the report. The first is an alphabetical list of the hosts. For each host there is in turn an alphabetical list of the pathogens. Recorded for each pathogen are the symptoms, the locality, and the source of this information. The second part of the report is an alphabetical list of

the pathogens with the hosts listed under each pathogen. While the host names are based on the ILDIS database, the pathogen names are those reported in the original literature. The records are based on published and unpublished reports as well as specimens located in the herbarium of the International Mycological Institute.

The publication is nicely laid out and easy to use. The literature survey appears to be thorough. No authors are provided for the pathogen names. This is a straightforward introduction to the pathogens of these "nitrogen fixing" trees and should be helpful to those working with them. (D.F. Farr)

BRETELIER. 1994. Novitates Gabonensis: 14. *Dialium lopense*, a new Leguminosae-Caesalpinoideae from Central Gabon. *Bull. Jard. Bot. Belg.* 63: 201-204.

BRETELIER. 1995. The boundary between Amherstieae and Detarieae (Caesalpinoideae). In CRISP and DOYLE, eds., *Phylogeny. Advances in Legume Systematics* 7: 53-62.

BRIZUELA and AGULLO. 1994. Biología floral en *Centrosema sagittatum* (Leguminosae). *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 814. (abstract)

Brookes, B., SMALL, H. Damman, D.T. Fairey, and L.P. Lefkovitch. 1994. Attractiveness of alfalfa (*Medicago sativa* L.) to wild pollinators in relation to wildflowers. *Canad. J. Pl. Sci.* 74: 779-783.

BRUNEAU and G.J. Anderson. 1994. To bee or not to bee? The pollination biology of *Apis americana* (Leguminosae). *Pl. Syst. Evol.* 192(1-2): 147-149.

BRUNEAU, DOYLE, and J.L. Doyle. 1995. Phylogenetic relationships in Phaseoleae: evidence from chloroplast DNA restriction site characters. In CRISP and DOYLE, eds., *Phylogeny. Advances in Legume Systematics* 7: 309-330.

Burghardt, A.D. 1994. Electroforesis de proteínas seminales para el análisis de los límites genérico e infragenéricos en *Prosopis* L. (Leguminosae). *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 332. (abstract)

Caffaratti, M., M.G. Ortega, M.E. Scarafia, L.A. Espinar, and H.R. Jullani. 1994. Prenylated flavanones from *Dalea elegans*. *Phytochemistry* 36(4): 1083-1084.

CAMERON and PRAKASH. 1994. Variations of the megagametophyte development in the Papilionoideae. In FERGUSON and TUCKER, eds., *Structural botany. Advances in Legume Systematics* 6: 97-115.

CANNON. 1994. Observations on coevolution of the Phyllachoraceae (Fungi: Ascomycota) with the Leguminosae. In SPRENT and MCKEY, eds., *The nitrogen factor. Advances in Legume Systematics* 5: 179-188.

CARDENAS. 1994. Estado actual del conocimiento taxonómico de las Leguminosae-Mimosoideae en Venezuela. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 375. (abstract)

Carreras, M.E. and PLANCHUELO. 1994. Evaluación estadística de caracteres taxonómicos de *Crotalaria incana* (Leguminosae). *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 243. (abstract)

Carrillo, E. 1994. Leguminosae de las Lomas costaneras del Perú. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 376. (abstract)

Castiñeiras, L., M. Esquivel, T. Gladis, and K. Hammer. 1994. New variations of *Phaseolus* in Cuba. *Pl. Genet. Resources Newslett.* 99: 38-40.

Castiñeiras, L., N. Pérez Nasser, and D. Piñero. 1994. The origin of *Phaseolus vulgaris* L. in Cuba: phaseolin patterns and their relationship with morpho-agronomical traits. *Pl. Genet. Resources Newslett.* 99: 25-28.

Cevallos-Ferriz, S.R.S. and J. Barajas-Morales. 1994. Fossil woods from the El Cien formation in Baja California Sur: Leguminosae. *I.A.W.A. J.* 15(3): 229-245.

CHAPPILL. 1995. Cladistic analysis of the Leguminosae: the development of an explicit hypothesis. *In* CRISP and DOYLE, eds., *Phylogeny. Advances in Legume Systematics* 7: 1-10.

CHAPPILL and MASLIN. 1995. A phylogenetic assessment of tribe Acacieae. *In* CRISP and DOYLE, eds., *Phylogeny. Advances in Legume Systematics* 7: 77-100.

CHEN, MENDENHALL, and TURNER. 1995. Taxonomy of *Thermopsis* (Fabaceae) in North America. *Ann. Missouri Bot. Gard.* 81(4): 714-742. 10 species recognized.

Chen, S.J. and T.C. Huang. 1995. Pollen morphology of the tribe Desmodieae (Leguminosae) in Taiwan. *Taiwania* 38(3-4): 67-89.

COWAN and MASLIN. 1995. *Acacia* miscellany 10: new taxa and notes on previously described taxa of *Acacia*, mostly section *Juliflorae* (Leguminosae: Mimosoideae), in Western Australia. *Nuytsia* 10(1): 15-62. Includes 20 new taxa, 1 new combination, and 5 previous names lectotypified.

COWAN and MASLIN. 1995. *Acacia* miscellany 11: miscellaneous taxa of northern and eastern Australia of *Acacia* section *Plurinerves* (Leguminosae: Mimosoideae). *Nuytsia* 10(1): 63-84. Includes 2 new species, 1 new subspecies, several lectotypifications, and discussions of other taxa.

CRISP. 1994. Evolution of bird pollination in some Australian legumes (Fabaceae). Pp. 281-309 in P. Eggleton and R. I. Vane-Wright, eds., *Phylogenetics and ecology*. Academic Press, London. A phylogenetic study on convergence in morphological characters related to bird-pollination in Brachysema, Nemcia, and Jansonia.

CRISP and DOYLE, eds. 1995. *Advances in legume systematics. 7. Phylogeny*. Royal Botanic Gardens, Kew. See contributing authors.

CRISP and J.M. Taylor. 1993. *Chorizema*. *Austral. Pl.* 17: 100-126. A synopsis of the monograph published in *Australian Systematic Botany* 5(3): 249-335. 1992.

CRISP and WESTON. 1995. Mirbelieae. *In* CRISP and DOYLE, eds., *Phylogeny. Advances in Legume Systematics* 7: 245-282.

Csurhes, S.M. and D. Kriticos. 1994. *Gleditsia triacanthos* L. (Caesalpiniaceae), another thorny, exotic fodder tree gone wild. *Plant Protect. Quart.* 9(3): 101-105.

DE FARIA, H.C. de LIMA, A.M. Carvalho, V.M. Conçalves, and SPRENT. 1994. Occurrence of nodulation in legume species from Bahia, Minas Gerais, and Espírito Santo States of Brazil. *In* SPRENT and MCKEY, eds., *The nitrogen factor. Advances in Legume Systematics* 5: 17-24.

DE FARIA and SPRENT. 1994. Legume nodule development: an evolutionary hypothesis. *In* SPRENT and MCKEY, eds., *The nitrogen factor. Advances in Legume Systematics* 5: 33-40.

De Leonardis, W., G. Fichera, and A. Zizza. 1993. Morphological study of pollens and seeds on annual taxa of the genus *Cicer* L. (Leguminosae). *Giorn. Bot. Ital.* 127(6): 1101-1113. Studied 8 taxa.

DELGADO SALINAS. 1994. Nuevas líneas de investigación en la sistemática de Fabaceas. Res. Simp. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 30 (abstract)

Di Sazio, O.A. and M.A. Gattuso. 1994. Ontogenia y anatomía de las peridermis en las especies autóctonas Argentinas del género *Erythrina* (Fabaceae). Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 29. (abstract)

Dimitrova, D., K. Varbanova, I. Peeva, S. Angelova, and Y. Guteva. 1994. A study on *in vitro* cultivation of *Glycyrrhiza glabra*. Pl. Genet. Resources Newsl. 100: 12-13.

Dione, M. and VASSAL. 1993. Etude expérimentale des modalités de la production gommière d'*Acacia senegal*. Rétrospective des programmes de développement gommier au Sahel sénégalais. Pp. 22-41 in Natural resources and social conflicts in the Sahel. Danish Dept. Int. Developm. /Danida éd.

Dopchiz, L., GOMEZ SOSA, and L. Poggio. 1994. Estudios chromosómicos en seis especies de *Astragalus* (Leguminosae). Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 700. (abstract)

DOYLE. 1994. Phylogeny of the legume family: an approach to understanding the origins of nodulation. Ann. Rev. Ecol. Syst. 25: 325-349.

DOYLE. 1995. DNA data and legume phylogeny: a progress report. In CRISP and DOYLE, eds., Phylogeny. Advances in Legume Systematics 7: 11-30.

Drewes, S.I. 1994. Estudio palinológico de especies Argentinas del género *Macroptilium* Urban (Fabaceae). Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 301. (abstract)

Du Puy, D.J. and LABAT. 1995. *Pyranthus*, a new genus of the tribe Millettiae (Leguminosae - Papilionoideae) from Madagascar. Kew Bull. 50(1): 73-84. Includes 6 species, 2 formerly in *Tephrosia*, 3 formerly in *Mundulea*, and 1 newly described.

Dure, R. and M.G. Barroso. 1994. Estudio taxonómico del género *Indigofera* L. (Fabaceae) en el Brasil y Paraguay. Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 386. (abstract)

Ehrlen, J. 1993. Pollen limitation and population growth in a herbaceous perennial legume. Ecology 76(2): 652-656. Studied *Lathyrus*.

Endo, Y. 1994. Pistil morphology of *Vicia amurensis* (Leguminosae) and its allied species. J. Jap. Bot. 69(6): 379-382.

ENNEKING and MAXTED. 1994. Narbon bean: *Vicia narbonensis* L. (Leguminosae). In J. Smartt and N. W. Simmonds, eds., Evolution of crop plants, 2nd ed. Longman Group, Harlow, Essex.

Erskine, W., J. Smartt, and F.J. Muehlbauer. 1994. Mimicry of lentil and the domestication of common vetch and grass pea. Econ. Bot. 48(3): 326-332.

Espejo-Ibanez, M.C., M.P Sanchez, and M.D. Sanchez-Yelamo. 1994. Isoenzymatic variability in seeds of some Spanish common beans (*Phaseolus vulgaris* L., Leguminosae): relation to their domestication centers. Biochem. Syst. Ecol. 22(8): 827-833.

Estrada C., A.E. and J.S. Marroquin de la Fuentes. 1991. Leguminosae in South-Central Nuevo Leon. (Leguminosas en el Centro-Sur de Nuevo León.) Rep. Ci. Fac. Ci. Forest., Univ. Auton. Nuevo León 10: 1-258. In Spanish.

Etcheverry, A.V., S.M. Pérez de Bianchi, and D. Martín de López. 1994. Fenología floral de *Macroptilium erythroloma* (Bentham) Urban (Fabaceae) y características reproductivas. Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 822. (abstract)

Evans, C.S., A.J. Shah, M.W. Adlard, and RICO-ARCE. 1994. Evolutionary trends within the genus *Acacia* based on the accumulation of non-protein amino acids in seeds. In SPRENT and MCKEY, eds., The nitrogen factor. Advances in Legume Systematics 5: 83-88.

EZE and A.O. Obadan. 1993. Aspects of biochemical and physiological characteristics of the fruits, seeds and seedlings of *Prosopis africana* (Guill. and Perr.) Taub. (Fabaceae). Int. J. Trop. Agric. 11(2): 88-92.

Fenster, C.B. 1995. Mirror image flowers and their effect on outcrossing rate in *Chamaecrista fasciculata* (Leguminosae). Amer. J. Bot. 82(1): 46-50.

FERGUSON and SCHRIRE. 1992. A cladistic analysis of the pollen morphology of the tribe Swartzieae (Leguminosae). In A. Le Thomas and FERGUSON, eds., Proc. Int. Palynol. Conf., Aix-en-Provence, 1992. Acta Bot. Gallica 141(2): 207-215.

FERGUSON, SCHRIRE, and R. Shepperson. 1994. Pollen morphology of the tribe Sophoreae and relationships between subfamilies Caesalpinoideae and Papilionoideae (Leguminosae). In FERGUSON and TUCKER, eds., Structural botany. Advances in Legume Systematics 6: 53-96.

FERGUSON and TUCKER, eds. 1994. Advances in legume systematics. 6. Structural botany. Royal Botanic Gardens, Kew. See contributing authors.

Forni-Martins, E.R., M. Franchi-Tanibata, and M.A. Cardelli-de-Lucena. 1994. Karyotypes of species of *Sesbania* Scop. (Fabaceae). Cytologia 59(4): 479-482. Five species studied.

FORTUNATO. 1994. Revisión del género *Collaea* (Leguminosae, Papilionoideae, Phaseoleae, Diocleinae). Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 252. (abstract)

FREITAS DA SILVA and CARREIRA. 1994. Leguminosas da Amazônia Brasileira - VI. *Heterostemon* Desf. (Leguminosae, Caesalpinoideae). Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 254. (abstract)

Fuentes, E., P. Perisse, and PLANCHUELO. 1994. Seed morphology and lipids analysis of cultivated and wild species of *Lupinus*. Pp. 187-192 in J. M. Neves Martins and M. L. Beirao da Costa, eds., Advances in lupin research. ISA-Press, Lisboa.

Fuentes, E., PLANCHUELO, and C. Guzman. 1993. Seed lipids analysis of cultivated and wild species of *Lupinus*. Abstracts VII Int. Lupin Conf., Evora, Portugal T. 2, No. 1. (abstract)

Fuentes, E., PLANCHUELO, E. Merino, and C. Guzman. 1994. Contribución al conocimiento fitoquímico de *Crotalaria incana* (Leguminosae). Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 337. (abstract)

Fujii, T., P. Baas, P. Gasson, and RIDDER-NUMAN. 1994. Wood anatomy of the *Sophora* group (Leguminosae). In FERGUSON and TUCKER, eds., Structural botany. Advances in Legume Systematics 6: 205-249.

Funch, L.S. and H.M. Watanabe. 1994. Pollen grains morphology of the genus *Periandra* Mart. ex Benth. - Leguminosae, Papilionoideae, Phaseoleae. Revista Brasil. Bot. 17(2): 105-111. In Portuguese.

Gagne, R.J. and J. Marohasy. 1993. The gall midges (Diptera: Cecidomyiidae) of *Acacia* spp. (Mimosaceae) in Kenya. *Insecta Mundi* 7(1-2): 77-124. Some potentially important as biocontrol agents.

Galindo Almanza, S. 1994. Hibridación natural y autogamia en los Fabaceas Mexicanas: *Prosopis laevigata* y *P. glandulosa* var. *torreyana* (mezquite, algarrobo). *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 703. (abstract)

Gallardo, R., E. Dominguez, and J.M. Munoz. 1994. Pollen-ovule ratio, pollen size, and breeding system in *Astragalus* (Fabaceae) subgenus *Epiglottis*: a pollen and seed allocation approach. *Amer. J. Bot.* 81(12): 1611-1619.

Gasson, P.E. 1994. Wood anatomy of the tribe Sophoreae and related Caesalpinoideae and Papilioideae. In FERGUSON and TUCKER, eds., Structural botany. Advances in Legume Systematics 6: 165-203.

Gault, R.R., A. Pilka, D.M. Hebb, and BROCKWELL. 1994. Nodulation studies on legumes exotic to Australia: symbiotic relationships between *Chamaecytisus palmensis* (tagasaste) and *Lotus* spp. *Austral. J. Exp. Agric.* 34: 385-394.

Gess, S.K. and F.W. Gess. 1994. Potential pollinators of the Cape group of Crotalarieae (sensu Polhill) (Fabales: Papilionaceae), with implications for seed production in cultivated rooibos tea. *African Entomology* 2(2): 97-106. Looks at hymenopterans visiting flowers of Aspalathus, Lebeckia, Wiborgia, and Rafnia.

Ghareman, A. and Sh. Zarre M. 1994. A new species of *Astragalus* L. sect. *Acidodes* Bunge (Fabaceae) from Iran. *Sendtnera* 2: 283-285.

GILL and G.O. Anoleifo. 1994. Germination biology of *Caesalpinia pulcherrima* L. (Leguminosae). *Ann. Forest.* 2: 12-18.

GILL and NYAWUAME. 1994. Leguminosae in ethnobotanical practices of Nigeria. *Ethnobotany* 6: 51-64.

Gomez Campos, A. and A. Andrade Cetto. 1994. El chicomol guaje (*Leucaena matudae* Zarate). Un recurso de la medicina tradicional mexicana. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 454. (abstract)

Gomez-Laurito, J. and L.D. Gomez. 1992. A short note on *Erythrina thrysiflora* (Fabaceae). *Brenesia* 37: 133.

Gottleib, O.R., M.A.C. Kaplan, A.M.M.S. Dan, D.H.T. Zocher, and M.R.M.B. Borin. 1994. Micromolecular clues for evolution of the Leguminosae. In SPRENT and MCKEY, eds., The nitrogen factor. Advances in Legume Systematics 5: 107-128.

GRETER and S.L. Camargo-Ricalde. 1993. *Mimosa bahamensis* (Leguminosae) in the Yucatan Peninsula, Mexico. *Bol. Soc. Bot. Mexico* 53: 55-72. In Spanish.

GRETER, A. Martínez-Bernal, and S.L. Camargo-Ricalde. 1994. Nueva especie del género *Mimosa* (Leguminosae) del Estado de México, México. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 260. (abstract)

GRIMES. 1995. Generic relationships of Mimosoideae tribe Ingeae, with emphasis on the New World *Pithecellobium* complex. In CRISP and DOYLE, eds., Phylogeny. Advances in Legume Systematics 7: 101-122.

Grosso, B., M. Saint-Martin, and VASSAL. 1994. Stomatal types of the genus *Acacia* (Fabaceae, Mimosoideae): an appraisal of diversity and taxonomic interest. *Bot. J. Linn. Soc.* 116(4): 325-341.

Grosso, N.R., A.L. Lamarque, J.A. Zygadlo, D.M. Maestri, and C.A. Guzman. 1994. Características químicas de semillas de especies silvestres de *Arachis*. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 338. (abstract)

Gutierrez Salgado, A., P. Gepts, and DEBOUCK. 1995. Evidence for two gene pools of the lima bean, *Phaseolus lunatus*, in the Americas. *Genet. Resources Crop Evol.* 42(1): 15-28.

Hall, N. and L.A.S. Johnson. 1993. The names of the acacias of New South Wales (with a guide to pronunciation of botanical names). Royal Botanic Gardens, Sydney.

Hammelt, K.R.W., MURRAY, K.R. Markham, and I.C. Hallett. 1994. Interspecific hybridization between *Lathyrus odoratus* and *L. belinensis*. *Int. J. Pl. Sci.* 155: 762-771.

HERENDEEN. 1995. Phylogenetic relationships of the tribe Swartzieae. In CRISP and DOYLE, eds., *Phylogeny. Advances in Legume Systematics* 7: 123-132.

Herrera, S., ZALLOCCHI, and PALACIOS. 1994. Estudio de flavonoides constitutivos en *Prosopidastrum globosum*. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 340. (abstract)

Hopkins, A., A. Scott, D.A. Costall, M.G. Lambert, and B.D. Campbell. 1993. Distribution of diploid and tetraploid *Lotus pendunculatus* plants in moist, North Island hill country. *New Zealand J. Agric. Res.* 36(4): 429-434.

Horner, H.T., LERSTEN, and C.L. Wirth. 1994. Quantitative survey of sieve tube distribution in foliar terminal veins of ten dicot species. *Amer. J. Bot.* 81(10): 1267-1274. Includes Glycine max and Trifolium repens.

HU. 1993. Seed protein diversity of *Phaseolus-Vigna* complex and its relatives. *Chinese J. Bot.* 5(1): 1-5.

HU. 1994. Seed protein diversity of *Caragana* populations in the Maowusu sandy grassland and its biological implication. *Acta Ecologica Sinica* 14(4): 372-380. In Chinese with English summary.

HU. 1994. Morphological variation of *Caragana* populations in the Maowusu sandy grassland. *Acta Ecologica Sinica* 14(4): 366-371. In Chinese with English summary.

HUGHES and HARRIS. 1994. The characterisation and identification of a naturally occurring hybrid in the genus *Leucaena* (Leguminosae-Mimosoideae). *Plant Syst. Evol.* 192(3-4): 177-197.

Ibarra-Perez, F.J. 1993. Pollination biology of common beans (*Phaseolus vulgaris* L.). Ph.D. Dissertation, Univ. California, Riverside.

ICARDA. 1994. Dryland Pasture & Forage Legume Network News: an informal vehicle for communication. International Center for Agricultural Research in the Dry Areas (P.O. Box 5466, Aleppo, Syria) 10: 1-28. See Bean Bag 36: 6. 1992.

IZAGUIRRE-ARTUCIO, S. Merola, and R. Beyhaut. 1995. Seed ontogeny in *Adesmia securigerifolia* (Fabaceae-Adesmiaeae). *Nordic J. Bot.* 14(5): 547-556.

Jacob, M., D. Zink, and W. Nagl. 1995. RFLPs of the rRNA genes in the genus *Phaseolus*. *Genet. Resources Crop Evol.* 42(2): 97-106.

Jahan, B., A.A. Vahidy, and S.I. Ali. 1995. Chromosome numbers in some taxa of Fabaceae mostly native to Pakistan. *Ann. Missouri Bot. Gard.* 81(4): 792-799. For 60 taxa in 35 genera, 44 taxa native to Pakistan.

Julio, N., B.G. Saidman, and J.C. Vilardis. 1994. Variabilidad genética en *Prosopis chilensis* (Leguminosae). *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 706. (abstract)

Kajita, T. and H. Ohashi. 1994. Chloroplast DNA variation in *Desmodium* subgenus *Podocarpium* (Leguminosae): infrageneric phylogeny and infraspecific variations. *J. Pl. Res.* 107: 349-354.

Kantz, K.E. and TUCKER. 1994. Developmental basis of floral characters in the Caesalpinieae. In FERGUSON and TUCKER, eds., Structural botany. *Advances in Legume Systematics* 6: 33-40.

KAPULER. 1995. Deep diversity seed catalogue. P.O. Box 15189, Santa Fe, NM 87506-5189 USA A phylogenetically arranged seed catalog attempting to provide an assortment of seeds spanning the plant "kindom." Includes 8 pages of legume offerings, representing 5/5 tribes of Caesalpinoideae, 3/5 tribes of Mimosoideae, and 22/31 tribes of Faboideae.

KAPULER and G. Howearth. 1994. Towards a kinship garden of the legumes. *Peace Seeds Resource J.* 7: 31-40.

Karoly, K. 1994. Inbreeding effects on mating system traits for two species of *Lupinus* (Leguminosae). *Amer. J. Bot.* 81(12): 1538-1544.

KIRKBRIDE, GUNN, and C.A. Ritchie. 1994. Seed and fruit phylogenies of Caesalpinoideae and Mimosoideae (Fabaceae) and their tribes. In FERGUSON and TUCKER, eds., Structural botany. *Advances in Legume Systematics* 6: 117-140.

KITE and LEWIS. 1994. Chemotaxonomy of seed non-protein amino acids in Caesalpinieae. In SPRENT and MCKEY, eds., The nitrogen factor. *Advances in Legume Systematics* 5: 101-105.

KLITGAARD. 1994. Floral ontogeny of tribe Dalbergieae (Leguminosae) and its systematic significance. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 265. (abstract)

Kollipara, K.P., L. Singh, and HYMOWITZ. 1994. Genetic variation of trypsin and chymotrypsin inhibitors in pigeonpea [*Cajanus cajan* (L.) Millsp.] and its wild relatives. *Theor. Appl. Genet.* 88(8): 986-993.

Kollipara, K.P., R.J. Singh, and HYMOWITZ. 1994. Genomic diversity and multiple origins of tetraploid ($2n=78, 80$) *Glycine tomentella* Hayata. *Genome* 37: 448-459.

KRETSCHMER, W.D. Pitman, R.C. Bullock, and T.C. Wilson. 1994. *Aeschynomene evenia* C. Wright (*evenia aeschynomene*), a perennial legume for grazing in South Florida. *Proc. Soil Crop Sci. Soc. Fla.* 53: 52-59.

LABAT and D.J. Du Puy. 1994. A new species, a new name, and lectotypifications in *Indigofera* L. (Leguminosae: Papilionoideae) from Madagascar. *Novon* 4(3): 255-265. 6 new species described, *I. tulearensis* M. Peltier renamed, and *I. ankaratrensis* and *I. mangokyensis* lectotypified.

Laghetti, G., B.J. Pienaar, K. Braun, and P. Perrino. 1994. Collecting wild *Vigna* in Natal and Transvaal (South Africa) and Swaziland. *Pl. Genet. Resources Newslett.* 98: 21-23.

Lamont, E.E. 1994. *Lespedeza striata* (Fabaceae), an addition to the flora of New York, with notes on its introduction and spread in the Eastern United States. *Bull. Torrey Bot. Club* 121(4): 377-378.

LAVIN. 1994. Origins, diversity, and phytogeography of neotropical Fabaceae. *Res. Simp. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 32. (abstract)

LAVIN. 1995. Tribe Robinieae and allies: model groups for assessing Early Tertiary northern latitude diversification of tropical legumes. *In CRISP and DOYLE, eds., Phylogeny. Advances in Legume Systematics* 7: 141-160.

LERSTEN and J.D. Curtis. 1994. Leaf anatomy in *Caesalpinia* and *Hoffmannseggia* (Leguminosae, Caesalpinoideae) with emphasis on secretory structures. *Pl. Syst. Evol.* 192(3-4): 231-255.

LEWIS and POLHILL. 1994. A situação atual de sistemática de Fabaceae. *Res. Simp. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 31 (abstract)

LEWIS and SCHRIRE. 1995. A reappraisal of the *Caesalpinia* group (Caesalpinoideae: Caesalpinieae) using phylogenetic analysis. *In CRISP and DOYLE, eds., Phylogeny. Advances in Legume Systematics* 7: 41-52.

LIMA, M.P.M. de. 1994. Leguminosae da Reserva Ecológica do IBGE, Brasília, D.F.: enfoque às espécies de Mimosoideae. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 398. (abstract)

LISTON. 1995. Use of the polymerase chain reaction to survey for the loss of the inverted repeat in the legume chloroplast genome. *In CRISP and DOYLE, eds., Phylogeny. Advances in Legume Systematics* 7: 31-40.

Lonn, M., H.C. Prentice, and H. Tegelstrom. 1995. Genetic differentiation in *Hippocratea emerus* (Leguminosae): allozyme and DNA fingerprint variation in disjunct Scandinavian populations. *Molecular Ecology* 4(1): 39-48.

LUCKOW. 1995. A phylogenetic analysis of the *Dichrostachys* group (Mimosoideae: Mimosae). *In CRISP and DOYLE, eds., Phylogeny. Advances in Legume Systematics* 7: 63-76.

MAASS and C.H. Ocampo. 1995. Isozyme polymorphism provides fingerprints for germplasm of *Arachis glabrata* Benth. *Genet. Resources Crop Evol.* 42(1): 77-82.

Magallón-Puebla, S. and S.R.S. Cevallos-Ferriz. 1994. Fossil legume fruits from Tertiary strata of Puebla, Mexico. *Canad. J. Bot.* 72(7): 1027-1038. With French summary.

Maisels, F. and A. Gauder-Hion. 1994. Why are Caesalpinoideae so important for monkeys in Hydromorphic rainforests of the Zaire Basin? *In SPRENT and MCKEEY, eds., The nitrogen factor. Advances in Legume Systematics* 5: 189-204.

Manning, J.C. and STIRTON. 1994. Endothelial thickenings and phylogeny of the Leguminosae. *In FERGUSON and TUCKER, eds., Structural botany. Advances in Legume Systematics* 6: 141-163.

Martínez-Bernal, A., GRETHER, and S.L. Camargo-Ricalde. 1994. El género *Mimosa* en el estado de Puebla, México. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 268. (abstract)

MASLIN. 1994. Notes on *Acacia adunca* and *A. linearifolia*, and the description of a new subspecies of *A. juncifolia* (Leguminosae: Mimosoideae) from eastern Australia. *Telopea* 6(1): 43-49.

MASLIN. 1995. *Acacia* miscellany 12: *Acacia myrtifolia* (Leguminosae: Mimosoideae: section *Phyllodineae*) and its allies in Western Australia. *Nuytsia* 10(1): 85-101. Includes 5 new species and 1 new subspecies. A key to the group is provided with notes on synonymy.

MASLIN and COWAN. 1995. Robert Brown, the typification of his new *Acacia* names in edition 2 of Aiton's "Hortus Kewensis." *Nuytsia* 10(1): 107-118.

MAXTED. 1995. An ecogeographic study of *Vicia* subgenus *Vicia*. Systematic and ecogeographic studies in crop gene pools. IBPGR, Rome. 182 pp.

MCKEY. 1994. Legumes and nitrogen: the evolutionary ecology of a nitrogen-demanding lifestyle. In SPRENT and MCKEY, eds., The nitrogen factor. *Advances in Legume Systematics* 5: 211-228.

Mejaya, M.J. 1994. The legume collection in Malang, Indonesia. *Pl. Genet. Resources News* 97: 49-50.

MENDENHALL. 1994. New combinations in *Thermopsis* and *Baptisia* (Fabaceae). *Phytologia* 76(5): 383-384.

MENDENHALL. 1994. Phylogeny of *Baptisia* and *Thermopsis* (Leguminosae) as inferred from chloroplast DNA and nuclear ribosomal DNA sequences, secondary chemistry, and morphology. Ph.D. Dissertation, Univ. Texas, Austin, Texas.

Merino, E.F. and PLANCHUELO. 1994. Chemotaxonomic evaluation of wild lupine ecotypes from Northeast Argentina. *The Science of Legumes* 1: 86-96.

MOREIRA. 1994. Fixação biológica do nitrogênio em espécies arbóreas. Pp. 121-149 in R.S. Araujo and M. Hungria, eds., *Microorganismos de importância agrícola*. EMBRAPA, Brasília.

MOREIRA and A.A. Franco. 1994. Rhizobia-host interactions in tropical ecosystems in Brazil. In SPRENT and MCKEY, eds., The nitrogen factor. *Advances in Legume Systematics* 5: 63-74.

MORERA. 1992. Rejuvenecimiento, caracterización, evaluación y utilización de jícama en Catie-Costa Rica. Pp. 287-304 in SORENSEN, ed., Proc. 1st Int. Symp. on Tuberous Legumes, Guadeloupe, F.W. 21-24 April 1992. CTA, UVL, INRA, Jordbrugsforlaget, Copenhagen.

Muzquiz, M., L.M. Robledo, C. Burbano, C. Cuadrado, G. Ayft, and MENDEZ. 1994. Variación en el contenido de alcaloides de la diferentes subespecies de *Chamaecytisus proliferus*. XXIII Reunión Internacional del Grupo de Cromatografía y Técnicas Afines, Peñíscola, Spain.

Nemoto, T., H. Ohashi, and H. Tamate. 1995. Phylogeny of *Lespedeza* and its allied genera (Desmodieae: Lespedezinae). In CRISP and DOYLE, eds., *Phylogeny*. *Advances in Legume Systematics* 7: 351-358.

Nilsson, O. 1994. Some introduced species of the pea family in Uppsala, Sweden. *Svensk Bot. Tidsk.* 88(5): 302-304. In Swedish.

Norverto, C.A., F. Gonzalez-Andres, and J.M. Ortiz. 1994. Leaf and stem anatomy of species of *Cytisophyllum*, *Cytisus*, *Chamaecytisus*, *Genista*, and *Genista* sect. *Teline* (Fabaceae: Genisteae) as an aid for taxonomy. *Israel J. Pl. Sci.* 42(3): 213-225. While stem anatomy has systematic value at the generic and infrageneric level, leaf anatomy does not. Results support generic arrangement proposed by BISBY (1981).

Norverto, C.A., A.F. González, and J.M. Ortiz. 1994. Novedades sobre la anatomía foliar y caulinar de algunas especies pertenecientes a Genisteae (Fabaceae). *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 62. (abstract)

NOVIKOVA, E.A. Pavlova, and E.V. Limeschenko. 1993. Phage sensitivity and host range of *Rhizobium* strains isolated from root nodules of temperate legumes. *Pl. & Soil* 151: 45-53.

NOVIKOVA, E.A. Pavlova, N.I. Vorobjev, and E.V. Meshchenko. 1994. Numerical taxonomy of *Rhizobium* strains from legumes of the temperate zone. *Int. J. Syst. Bacteriol.* 44(4): 734-742.

Ochoterena-Booth, H. and DELGADO SALINAS. 1994. Contributions to the taxonomy of *Ramirezella* (Leguminosae, Papilionoideae). *Anales Inst. Biol. Univ. Nac. Auton. Mexico, Bot.* 65(1): 7-19. In Spanish. Three new species are described for Mexico and Guatemala and one new combination is made.

Ouédraogo, A.S. 1995. *Parkia biglobosa* (Leguminosae) en Afrique de l'Ouest: biosystématique et amélioration. Thesis, Agricultural University Wageningen.

Painuli, R.M. and R.L.S. Sikarwar. 1993. *Stylosanthes fruticosa* (Retz.) Alston (Fabaceae), an addition to the flora of Madhya Pradesh. *Indian J. Forest.* 16(1): 83-84.

Pardo, C., P. Cubas, and P.S. Testillano. 1994. Evolutionary trends of the exine structure in *Ulex*, *Stauracanthus*, and *Genista* (Genisteae, Papilionoideae, Leguminosae). *Acta Bot. Gallica* 141(2): 195-205.

Paredes, O.M. and P. Gepts. 1995. Extensive introgression of Middle American germplasm into Chilean common bean cultivars. *Genet. Resources Crop Evol.* 42(1): 29-41.

Pelotto, J.P. and M.A. de P. Martínez. 1994. Flavonoides en *Phaseolus* (Phaseolinae, Fabaceae): el complejo *coccineus-vulgaris* y *P. lunatus*. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 353. (abstract)

PENNINGTON. 1995. Cladistic analysis of chloroplast DNA restriction site characters in *Andira* (Leguminosae: Dalbergieae). *Amer. J. Bot.* 82(4): 526-534.

Peretti, A., M. Murcia, A. Cosenza, and S. Sanmartino. 1994. Caracterización morfológica de semillas y plantulas de *Lotus tenuis* y *L. corniculatus*. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 840. (abstract)

Perisse, P. and PLANCHUELO. 1995. Seed morphology for cultivated and wild species of *Lupinus*. *Abstracts VII Int. Lupin Conf.*, Evora, Portugal T. 1, No. 2. (abstract)

Pignone, D., I. Galasso, and G. Venora. 1995. Karyomorphological and heterochromatin similarities among four *Vigna* species. *Genet. Resources Crop Evol.* 42(1): 57-60.

Pinto, G.L., M. Martínez, S. Ortega, N. Villavicencio, and L. Borjas. 1993. Comparison of gum specimens from *Acacia tortuosa* and other *Gummiferae* species. *Biochem. Syst. Ecol.* 21(8): 795-797.

PLANCHUELO. 1992. Características morfológicas de las especies americanas de *Lupinus* de interés agronómico. *Etnobotánica 92*. Córdoba, España. Simposio III: 318. (abstract)

PLANCHUELO. 1993. Wild lupin distribution and its implication as germplasm resources. *Abstracts VII Int. Lupin Conf.*, Evora, Portugal T. 1, No. 6. (abstract)

PLANCHUELO. 1994. Quinolizidine alkaloid profiles of wild lupines from South America. *The Science of Legumes* 1: 81-85.

PLANCHUELO. 1994. Las especies de *Lupinus* del noreste Argentino, Uruguay y Paraguay. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 277. (abstract)

PLANCHUELO. 1994. Wild lupins distribution and its implication as germplasm resources. Pp. 65-69 in J. M. Neves Martins and M. L. Beirao da Costa, eds., Advances in lupin research. ISA-Press, Lisboa.

PLANCHUELO and E. Fuentes. 1994. Las especies de *Lupinus* y sus características como cultivo proteoleaginoso. Oleaginosos 7: 22-26.

PLANCHUELO, L. Witte, and M. Wink. 1993. Quinolizidine alkaloid profiles of South America lupins: *Lupinus linearis* and the *Lupinus gibertianus* complex. Z. Naturf., C. 48: 702-706.

PODLECH. 1994. Revision der altweltlichen anuelle Arten der Gattung *Astragalus* L. (Leguminosae). Sendtnera 2: 39-170.

POLHILL. 1994. Classification of the Leguminosae. Pp. 35-56 in BISBY, J. Buckingham, and J.B. Harborne, eds., Phytochemical dictionary of the Leguminosae. Chapman & Hall, London.

Prin, Y., A. Galiana, M. Ducouso, B. Dupuy, and P. De Lajudie. 1993. Rhizobia nodulating *Acacias*: biodiversity and taxonomy. Bois Forêts Trop. 238: 5-20. In French.

Provorov, N.A. 1994. The interdependence between taxonomy of legumes and specificity of their interaction with rhizobia in relation to evolution of the symbiosis. Symbiosis 17(2-3): 183-200.

PRZYBYLSKA and ZIMNIAK-PRZYBYLSKA. 1995. Electrophoretic patterns of seed globulins in the Old-World *Lupinus* species. Genet. Resources Crop Evol. 42(1): 69-75.

QUEIROZ. 1994. *Cratylia bahiensis* (Leguminosae: Papilionoideae), a new species from Bahia, Brazil. Kew Bull. 49(4): 769-773.

RAINA and Y. Ogihara. 1994. Chloroplast DNA diversity in *Vicia faba* and its close wild relatives: implications for reassessment. Theor. Appl. Genet. 88: 261-266.

Ravelo, A.C., PLANCHUELO, and R. Zanvettor. 1993. Assessing agroecological conditions for lupin zoning in Argentina. Abstracts VII Int. Lupin Conf., Evora, Portugal T. 3, No. 9. (abstract)

REYNOSO-DUENAS. 1994. La familia Fabaceae en el occidente de México. Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 410. (abstract)

Ricker, M., G. Veen, D.C. Daly, L. Witte, M. Sinta-V, J. Chota-I., and F.-C. Czygan. 1994. Alkaloid diversity in eleven species of *Ormosia* and in *Clathrotropis macrocarpa* (Leguminosae-Papilionoideae). Brittonia 46(4): 355-371. Distribution of specific alkaloids was not congruent with morphology; alkaloid concentrations were inconsistent and not useful as taxonomic characters.

RICO-ARCE. 1994. Four new species of *Zygia* (Leguminosae: Mimosoideae). Kew Bull. 49(3): 547-554.

RICO-ARCE. 1994. *Bauhinia jenningsii*: Leguminosae. Kew Mag. 11(4): 167-171.

RICO-ARCE. 1995. Note on neotropical *Acacia* (Leguminosae: Mimosoideae). Kew Bull. 50(1): 178.

RICO-ARCE and J.M. Barham. 1994. *Bossiaea walkeri*: Leguminosae. Kew Mag. 11(4): 171-174.

RIDDER-NUMAN. 1995. Phylogeny and biogeography of *Spatholobus*, *Butea*, and *Kunstleria* (Papilionoideae). In CRISP and DOYLE, eds., Phylogeny. Advances in Legume Systematics 7: 133-140.

Robertson, L.D. and M.H. El-Sherbeeny. 1995. Autofertility in a pure line faba bean (*Vicia faba* L.) germplasm collection. *Genet. Resources Crop Evol.* 42(2): 157-163.

ROMEO. 1994. Nonprotein amino acids from legumes (Mimosoideae). *Res. Simp. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 48. (abstract)

ROMEO and MORTON. 1994. Nonprotein amino acids of the Ingeae: taxonomic and ecological considerations. *In* SPRENT and MCKEY, eds., *The nitrogen factor. Advances in Legume Systematics* 5: 89-100.

Rudall, P.J., G. Myers, and LEWIS. 1994. Floral secretory structures in *Caesalpinia* sensu lato and related genera. *In* FERGUSON and TUCKER, eds., *Structural botany. Advances in Legume Systematics* 6: 41-52.

Ruiz V., R. 1994. Las Mimosoideae (Leguminosae) en el departamento del Choco, region fitogeográfica del Choco, Colombiano. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 417. (abstract)

SALMANOWICZ and PRZYBYLSKA. 1994. Electrophoretic patterns of seed albumins in the Old-World *Lupinus* species (Fabaceae): variation in the 2S albumin class. *Pl. Syst. Evol.* 192(1-2): 67-78.

SANDERSON and LISTON. 1995. Molecular phylogenetic systematics of Galegeae, with special reference to *Astragalus*. *In* CRISP and DOYLE, eds., *Phylogeny. Advances in Legume Systematics* 7: 331-350.

SANJAPPA. 1994. *Crudia* (Leguminosae: Caesalpinoideae), a new generic record for India with a new species of the genus. *Kew Bull.* 49(3): 565-568.

SANTOS and FRANCISCO-ORTEGA. 1995. On the nomenclature and types of *Chamaecytisus proliferus* Link (Fabaceae: Genisteae), a fodder shrub from the Canary Islands. *Bot. J. Linn. Soc.* 115(3): 235-245.

SCHRIRE. 1995. Evolution of the tribe Indigoferae (Leguminosae: Papilionoideae). *In* CRISP and DOYLE, eds., *Phylogeny. Advances in Legume Systematics* 7: 161-244.

Scogin, R. 1991. Anthocyanins of the genus *Erythrina* (Fabaceae). *Biochem. Syst. Ecol.* 19(4): 329-332.

Senesse, S. 1995. Pollen polymorphism of the tropical genus *Dialium* L. (Caesalpinoideae, Leguminosae): biogeographic and evolutionary implications. *Rev. Palaeobot. Palynol.* 84(3-4): 347-364.

Sharma, N.K. and K.C. Sharma. 1994. Development and structure of seedcoat in *Tephrosia* Pers. (Leguminosae). *Feddes Repert.* 105(5-6): 287-292.

Shrestha, K.K. 1994. Tropical legumes in Nepal Himalaya. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 420. (abstract)

Shvareva, N.Y. 1993. *Fagus juliae* (Fagaceae) and *Cassia mucronata* (Fabaceae) in the Miocene flora of Kosov (Ciscarpathian Region, Ukraine). *Bot. Zhurn. (St. Petersburg)* 78(7): 16-21. In Russian.

Silpi Das and THOTHATHRI. 1993. Morphology of foliar tracheoids and their taxonomic significance in the genus *Dalbergia* Linn. f. *J. Pl. Anat. Morphol.* 6: 63-66.

Singh, R.J., K.P. Kollipara, and HYMOWITZ. 1994. Intergenomic relationships among wild perennial *Glycine* species. World Soybean Research Conference V. Proceedings. Chiang Mei, Thailand, 21-27 Feb. 1994. (abstract no. 0016)

Skutch, A.F. 1992. Floral behavior of *Calliandra surinamensis* (Mimosaceae). *Brenesia* 37: 141-143.

SMALL. 1994. Additional clarification of the *Medicago blancheana-bonarotiana-rotata* complex. *Canad. J. Bot.* 72: 829-831.

Smreciu, A. 1993. Native legumes for reclamation in Alberta. Rep. Reclamation Res. Techn. Advisory Comm., Edmonton, Alberta. (ISBN-0-7732-6043-9)

SOKOLOFF. 1995. On some morphological characters in the taxonomy of the genus *Anthyllis* L. s.l. (Papilionaceae). Pp. 41-43 in ROSKOV and S. I. Chubarov, eds., Proc. Vth Young Botanists Conf. St. Petersburg. The stamens in the genus *Anthyllis* L., s.str., are usually treated as monodelphous. This study of the androecium of *Anthyllis vulneraria* (type species of *Anthyllis*) demonstrates its diadelphous structure. Some other characters are discussed. In Russian.

SOKOLOFF. 1995. Morphological and taxonomical study of *Anthyllis* L. s.l. and related genera (Papilionaceae, Loteae). 12 Symposium Morphologie Anatomie Systematik (7-10 Mar 1995). Zusammenfassungen der Poster und Vortraege. Mainz S. 93. *A. tetraphylla* differs from *Anthyllis*, s.str., *Hammatolobium*, and *Hymenocarpos* in its dehiscent, not lomentaceous, fruit and heterocellular structure of testa palisade layer and must be treated as a single member of the separate genus *Tripodion*. Based on inflorescence structure, it is proposed to exclude *A. cytisoides* and *A. terniflora* from *Anthyllis* sect. *Aspalathoides* and to include *A. lemanniana* in *Anthyllis* sect. *Anthyllis*.

Soltis, D.E., P.S. Soltis, D.R. Morgan, S.M. Swensen, B.C. Mullin, J.M. Dowd, and P.G. Martin. 1995. Chloroplast gene sequence data suggest a single origin of the predisposition for symbiotic nitrogen fixation in angiosperms. *Proc. Natl. Acad. Sci. U.S.A.* 92(7): 2647-2651.

Sonnante, G., T. Stockton, R.O. Nodari, V.L. Becerra Velasquez, and P. Gepts. 1994. Evolution of genetic diversity during the domestication of common-bean (*Phaseolus vulgaris* L.) *Theor. Appl. Genet.* 89(5): 629-635. Domestication has occurred separately in two areas leading to two cultivated gene pools with a pronounced reduction in genetic diversity among cultivated descendants from that of their wild progenitors.

SOUSA-PENA. 1992. Polinización en el complejo *Phaseolus coccineus* L. (Fabaceae). B.S. Dissertation, Univ. Nacional Autónoma de México, Mexico. 60 pp.

SPRENT. 1994. Evolution and diversity in the legume-rhizobium symbiosis: chaos theory? *Pl. & Soil* 161: 1-10.

SPRENT. 1994. Nitrogen acquisition systems in the Leguminosae. In SPRENT and MCKEY, eds., The nitrogen factor. *Advances in Legume Systematics* 5: 1-16.

SPRENT and MCKEY, eds. 1994. *Advances in legume systematics*. 5. The nitrogen factor. Royal Botanic Gardens, Kew. See contributing authors.

Stockton, T. and P. Gepts. 1994. Identification of DNA probes that reveal polymorphisms among closely related *Phaseolus vulgaris* lines. *Euphytica* 76(3): 177-183.

Sutherland, J.M., S.C. McInroy, F.K. James, and T. Naisbitt. 1994. Nodule structure with special reference to the tribes Sophoreae, Genisteae and Thermopsidae. In SPRENT and MCKEY, eds., The nitrogen factor. *Advances in Legume Systematics* 5: 41-56.

SZABO. 1994. Systematic position and relatives of *Coronilla varia* L. Pp. 1-17 in I. Bócsa, A tarka Coronafürt - *Coronilla varia* L., Magyarornág Kultúrflórája (The cultivated flora of Hungary). III. 9/a. Publ. Hung. Acad. Sci., Budapest. In Hungarian with Latin diagnoses.

Taylor, N.L. 1995. Characterization of the United States germplasm collection of zigzag clover (*Trifolium medium* L.). *Genet. Resources Crop Evol.* 42(1): 43-47.

Tayyar, R.I. 1993. Genetic relationships among annual *Cicer* L. species. Ph.D. Dissertation, Univ. California, Riverside.

Thomas, J.F. 1994. Morphological and developmental plasticity in legumes. In FERGUSON and TUCKER, eds., Structural botany. *Advances in Legume Systematics* 6: 1-10.

Thome, J., O. Toro, J. Vargas, and DEBOUCK. 1995. Variability studies in Andean *nuña* common beans (*Phaseolus vulgaris*, Fabaceae). *Econ. Bot.* 49(1): 78-95.

Thulin, M. 1994. A new species of *Tephrosia* (Leguminosae) from southern Yemen, with a note on the identity of *T. geminiflora*. *Nordic J. Bot.* 14(5): 487-489.

Tietz, S. and Sh. Zarre M. 1994. Revision von *Astragalus* L. sect. *Megalocystis* Bunge (Fabaceae). *Sendtnera* 2: 287-363.

Tikhomirov, V.N. and SOKOLOFF. 1995. On the genus *Anthyllis* L. (Leguminosae, Loteae) in European Russia. Pp. 133-135 in V. N. Tikhomirov, ed., *Floristic investigations in the Central Russia*. Moscow. In Russian.

Tikhomirov, V.N. and SOKOLOFF. 1995. System of the genus *Anthyllis* L. (Papilionaceae, Loteae). Conference "Factors of taxonomic and biochorological diversity." St. Petersburg. Accepts 4 subgenera: subg. Oreanthyllis V. N. Tikhom. & Sokoloff (14 spp.; typus: *A. montana*); subg. Anthyllis s.str. (2 spp.; typus: *A. vulneraria*); subg. Terniflora V. N. Tikhom. & Sokoloff (2 spp.; typus: *A. terniflora*); and, subg. Cornicina (DC.) Akulova (3 spp.; typus: *A. cornicina*). In Russian.

Torres G., A.M., MAASS, and M. Andrade. 1994. Un marcador morfológico para estimar el entrecruzamiento en la leguminosa tropical *Centrosema brasiliense* (L.) Benth. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 712. (abstract)

TUCKER and A.W. Douglas. 1994. Ontogenetic evidence and phylogenetic relationships among basal taxa of legumes. In FERGUSON and TUCKER, eds., Structural botany. *Advances in Legume Systematics* 6: 11-32.

TURNER. 1994. A new gypsophilic species of *Sophora* (Fabaceae) from Nuevo Leon, Mexico. *Phytologia* 76(5): 385-388.

TURNER. 1994. Texas species of *Schranksia* (Mimosaceae) transferred to the genus *Mimosa*. *Phytologia* 76(5): 412-420.

TURNER. 1994. Northern Mexican species of *Schranksia* (Mimosaceae) transferred to *Mimosa*. *Phytologia* 76(5): 421-425.

Udupa, S.M., A. Sharma, R.P. Sharma, and R.A. Pai. 1993. Narrow genetic variability in *Cicer arietinum* L. as revealed by RFLP analysis. *J. Pl. Biochem. Biotechn.* 2(2): 83-86.

Valsecchi, F. 1994. The *Astragalus tragacantha* L. (Leguminosae) complex in the Mediterranean. *Webbia* 49(1): 31-41. In Italian with English summary.

VAN WYK and A.L. Schutte. 1994. *Stirtonia*, a new genus of the tribe Podalyrieae (Leguminosae) from South Africa. *Nordic J. Bot.* 14(3): 319-325. Includes 3 species segregated from *Podalyria*.

VAN WYK and G.H. Verdoorn. 1991. Alkaloidal variation in the genus *Pearsonia*. *Biochem. Syst. Ecol.* 19(8): 685-695.

VAN WYK and G.H. Verdoorn. 1991. Chemotaxonomic significance of alkaloids in the genus *Robynsophyton*. *Biochem. Syst. Ecol.* 19(8): 681-683.

VAN WYK and P.J.D. Winter. 1994. Chemotaxonomic value of anthocyanins in *Podalyria* and *Virgilia* (tribe Podalyrieae: Fabaceae). *Biochem. Syst. Ecol.* 22(8): 813-818.

VAN WYK and A.L. Schutte. 1995. Phylogenetic relationships in the tribes Podalyrieae, Liparieae and Crotalarieae. In CRISP and DOYLE, eds., *Phylogeny. Advances in Legume Systematics* 7: 283-308.

Vanni, R. 1994. El género *Stylosanthes* (Leguminosae) en Argentina. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 287. (abstract)

VASSAL. 1992. Etapes histologiques du processus de gombose chez *Acacia senegal*. Pp. 271-276 in A. Riedacker et al., eds., *Physiologie des arbres et arbustes en zones arides et semi-arides. Observatoire du Sahara et du Sahel/Group d'Etude de l'Arbre*, Paris - Publ. Ministère de la Coopération.

VASSAL and M. Dione. 1993. Les acacias gommiers au Sahel. Exsudation gommière et production - perspectives. Pp. 180-192 in *Natural resources and social conflicts in the Sahel*. Danish Dept. Int. Developm./Danida éd.

VASSAL and M. Mouret. 1992. État des connaissances sur l'induction de gombose chez *Acacia senegal*. Pp. 277-282 in A. Riedacker et al., eds., *Physiologie des arbres et arbustes en zones arides et semi-arides. Observatoire du Sahara et du Sahel/Group d'Etude de l'Arbre*, Paris - Publ. Ministère de la Coopération.

VAZ. 1994. Padrões de distribuição e diversificação de *Bauhinia* subg. *Phanera* no Brasil. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 286. (abstract)

VEASEY, O.M.A.A. Ghisi, N.R. Mecilis, E.A. Schamass, and I.P. Otsuk. 1994. Avaliação de acessos de *Calopogonium mucunoides* Desv. - Características morfológicas ligadas a aspectos reproductivos e produção de sementes. *Boletim de Indústria Animal* 51(1): 27-34.

VEIGA and G.M. Corso. 1994. Sistema vascular do caule e folha do amendoim (*Arachis hypogaea* L.) tipo botânico Valência. *Bol. Científico. Inst. Agron. Campinas* 31: 1-17.

VEIGA and VALLS. 1994. Chave para a identificação de populações em *Arachis sylvestris* (A. Chev.) A. Chev. *Res. Técn. VI Congr. Latinoamer. Bot.*, Mar del Plata, Argentina 250. (abstract)

Villarreal-Q., J.A. and M.A. Carranza-P. 1994. Two new species of *Astragalus* (Leguminosae) from northeastern Mexico. *Brittonia* 46(4): 335-339.

Vonhof, M.J. and L.D. Harder. 1995. Size-number trade-offs and pollen production by papilionaceous legumes. *Amer. J. Bot.* 82(2): 230-238.

Waterman, P.G. 1994. Costs and benefits of secondary metabolites to the Leguminosae. In SPRENT and MCKEY, eds., *The nitrogen factor. Advances in Legume Systematics* 5: 129-150.

WEDER. 1994. Differences in mode of action of proteinase inhibitors from Papilionoideae against human and bovine enzymes. In SPRENT and MCKEY, eds., The nitrogen factor. Advances in Legume Systematics 5: 205-210.

Wege, L., SCHULTZE-KRAFT, and C. Burgos. 1993. Recolección de leguminosas forrajeras nativas y distribución natural de *Centrosema* en Honduras. *Ceiba* 34(1): 7-21.

Welsh, S.L. 1995. Names and types of *Hedysarum* L. (Fabaceae) in North America. *Great Basin Naturalist* 55(1): 66-73.

Westerkamp, C. 1993. The co-operation between the asymmetrical flower of *Lathyrus latifolius* (Fabaceae-Vicieae) and its visitors. *Phyton (Horn)* 33(1): 121-137.

Westley, S.B. and M.H. Powell. 1993. *Erythrina* in the New and Old Worlds. Nitrogen Fixing Tree Res. Rep. Special Issue. 358 pp. Proceedings from an international conference in Turrialba, Costa Rica in October, 1992.

Whitty, P.W., W. Powell, and SPRENT. 1994. Molecular separation of genera in Cassiinae (Leguminosae), and analysis of variation in the nodulating species of *Chamaecrista*. *Molecular Ecol.* 3(5): 507-515.

WILLIAMS. 1994. Exploración etnobotánica para recursos fitogenéticos de cacahuate en México. Pp. 137-147 in J. A. Cuervas S., E. Estrada L., and E. Cedillo P., eds., Mem. Primer Simp. Int. Etnobot. Mesoamér. "Enfraíl Hernández X." Univ. Autónoma Chapingo, Chapingo, México.

Wink, M. and D.B. Carey. 1994. Variability of quinolizidine alkaloid profiles of *Lupinus argenteus* (Fabaceae) from North America. *Biochem. Syst. Ecol.* 22(7): 663-669.

Wojtusik, T., FELKER, E.J. Russell, and M.D. Benge. Cloning of erect thornless non-browsed nitrogen-fixing trees of Haiti's principal fuelwood species. *Agroforestry Systems* 21: 293-300.

ZALLOCCHI and A.B. Pomilio. 1994. Evolution of flavonoids in the Phaseolinae. *Phytochemistry* 37(2): 449-453. Includes 8 species of *Vigna*, 8 *Macroptilium*, 3 *Phaseolus*, and 1 *Dolichopsis*.

ZALLOCCHI and A.B. Pomilio. 1994. Flavonoides como marcadores químicos para estudios filogenéticos en Phaseolinae. Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 364. (abstract)

ZHANG. 1994. Leaf venation of Cercideae (Leguminosae). *J. Trop. & Subtrop. Bot.* 2(4): 45-57.

ZHANG. 1994. Systematics and biogeography of *Bauhinia* L. (Leguminosae-Caesalpinoideae): I. Cladistic analysis of sect. *Lasiobema* (Kunth) Benth. *Guishaia* 14(1): 11-17.

ZIMNIAK-PRZYBYLSKA and PRZYBYLSKA. 1994. Electrophoretic seed albumin patterns in wild and cultivated forms of *Phaseolus vulgaris* L. *Genet. Polon.* 35: 171-182.

Zoellner, O., E. Varas, C. Iracheta, G. Muñoz, and B. Palma. 1994. El género *Prosopis* (Mimosaceae) en Chile. Res. Técn. VI Congr. Latinoamer. Bot., Mar del Plata, Argentina 427. (abstract)

ZYMNITSKAYA. 1994. The ovules morphology of *Trifolium trichocephalum* Bieb. P. 137 in (unknown editor), The success of the ecological morphology of the plants. Moscow. In Russian.